

REMARKS

By this Amendment, claim 2 is cancelled, claims 1 and 3-5 are amended, and claims 6-9 are added. Thus, claims 1 and 3-9 are active in the application.

Reexamination and reconsideration of the application are respectfully requested.

The specification and abstract have been carefully reviewed and revised in order to correct grammatical and idiomatic errors in order to aid the Examiner in further consideration of the application. The amendments to the specification and abstract are incorporated in the attached substitute specification and abstract. No new matter has been added.

Also attached hereto is a marked-up version of the substitute specification and abstract illustrating the changes made to the original specification and abstract.

In item 1 on page 2 of the Office Action, the Examiner objected to the title of the invention as not being descriptive and required a new title of the invention that is clearly indicative of the invention to which the claims are directed. In response to the Examiner's requirement, the title of the invention has been revised to "Electronic Camera Recording/Playback Apparatus for Shooting Pictures and Editing Shot Data". The Applicant respectfully submits that the new title of the invention is clearly indicative of the invention to which the claims are directed. Accordingly, approval of the new title of the invention is respectfully requested.

Replacement formal drawings of Figures 1-10 are submitted concurrently herewith in order to correct a mislabeled reference numeral in Figure 4 and to correct a misspelled term in each of Figures 5-6. In particular, the reference numeral "104" is used to denote both the main unit and the display unit in Figure 4. However, reference numeral "100" is used in the specification and in the drawings to denote the main unit. Accordingly, Figure 4 was revised in order to correctly label the main unit as corresponding to reference numeral "100" instead of reference numeral "104". Furthermore, the misspelled terms "Funktion" were each corrected in revised Figures 5-6. Approval of the replacement formal drawings is respectfully requested.

The Applicant thanks the Examiner for kindly indicating, in item 3 on page 3 of the Office Action, that claims 2-5 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 1 was

amended to include the limitations originally presented in claim 2. Further, minor editorial revisions were made to each of claims 1 and 3-5 in order to improve their U.S. form. The Applicant submits that the revisions made to claims 1 and 3-5 were not to broaden or narrow their scope of protection for the present invention.

Accordingly, in view of the Examiner's assertion that claims 2-5 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, the Applicant respectfully submits that claim 1, as well as claims 3-5 which depend therefrom, are clearly allowable.

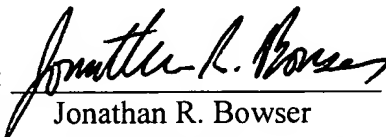
New claims 6-9 are similar in scope to amended claims 1 and 3-5, except that new claims 6-9 were each drafted so as to avoid a construction under 35 U.S.C. § 112, sixth paragraph. Accordingly, since new claims 6-9 are similar in scope to amended claims 1 and 3-5, respectively, which the Examiner indicated to be allowable if rewritten in the manner as described above, the Applicant respectfully submits that new claim 6, as well as new claims 7-9 which depend therefrom, are also clearly allowable.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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August 25, 2004

ELECTRONIC CAMERA RECORDING/PLAYBACK APPARATUS FOR SHOOTING

PICTURES AND EDITING SHOT DATA

FIELD OF THE INVENTION

The present invention relates to an electronic camera
5 recording/reproduction apparatus which is operable to both shoot
pictures ~~having the function of shooting and to edit the function~~
~~of editing shot data.~~

BACKGROUND OF THE INVENTION

Conventionally, there ~~There have conventionally been~~ two
10 types of electronic camera recording/playback apparatuses, one
not having a ~~no~~-function of editing and the other having the
function of editing. The electronic camera recording/playback
apparatus not having the ~~no~~-function of editing must use
equipment such as a personal computer or the like to edit ~~when it~~
15 ~~edits~~ shot data.

Hereinafter, an example of a conventional electronic camera
recording/playback apparatus will be described with reference to
figures 9 and 10. Initially, the structure of the conventional
electronic camera recording/playback apparatus will be described.
20 Figures 9 and 10 are a forward perspective view and a backward
(rear) perspective view, respectively, illustrating the structure
of a conventional electronic camera recording/playback apparatus
300. The conventional electronic camera recording/playback
apparatus 300 is provided with a lens 301, a liquid crystal
25 display 302, and operation buttons 303.

Next, the operation of the conventional electronic camera recording/playback apparatus 300 will be described. When the operator points the lens 301 at a subject, the subject is reflected on the liquid crystal display 302, and the operator can shoot the subject by pressing the operation button 303. In order to edit the shot data, the operator connects a personal computer to the electronic camera recording/playback apparatus 300 by a cable, starts software for editing the shot data on the personal computer, and edits the shot data on the screen of the personal computer.

On the other hand, it is not easy for the operator to perform editing with the conventional electronic camera recording/playback apparatus having the function of editing because of restrictions on its structure. Further, since the main unit of the apparatus must be compact, the number of operation buttons to be provided is limited. Therefore, it is difficult to increase the operations which are required for editing. Further, the apparatus must be provided with an operation button for switching the operation mode between the shooting mode and the editing mode. Although there has been an electronic camera recording/playback apparatus having a touch panel on a liquid crystal display to increase the number of operation buttons and thereby to improve the operability, since the operator directly touches the liquid crystal display for operation, bleeding may occur on the liquid crystal display or

the liquid crystal display may be contaminated by fingerprints.

SUMMARY OF THE INVENTION

The present invention is made to solve the above-described problems and ~~has for its object~~ is to provide an electronic camera recording/playback apparatus which ~~that~~ is simple to operate and which enables both shooting and editing of shot data.

Other objects and advantages of the present invention will become more apparent from the following detailed description ~~that follows~~. The detailed description and specific embodiments described herein are provided only for illustration since various additions and modifications within the scope of the present invention will be apparent to those skilled ~~of skill~~ in the art from the detailed description.

According to a first aspect of the present invention, there is provided an electronic camera recording/playback apparatus having the function of shooting a subject and the function of editing shot data. The electronic camera recording/playback apparatus comprises, and comprising a main unit and a display unit which displays a shot image or an edited image. Further, the electronic camera recording/playback apparatus ~~and~~ is able to take plural attitudes to the main unit, wherein the display unit takes: a closed attitude in which a display screen of the display unit confronts the side surface of the main unit, and the rear surface of the display unit is exposed; a shooting attitude in which the display unit is released from the side surface of the

main unit; and an editing attitude in which the display screen of the display unit is ~~in parallel to~~ with the side surface of the main unit and is exposed to the outside. Therefore, the electronic camera recording/playback apparatus is easy to handle in the closed attitude, and it enables the operator to perform shooting and editing easily.

According to a second aspect of the present invention, the electronic camera recording/playback apparatus of the first aspect includes: attitude recognition means for recognizing that the display unit takes any one of the closed attitude, the shooting attitude, and the editing attitude; and mode switching means for setting the main unit in the power-off state, the ready-for-shooting state, or the ready-for-editing state when the attitude recognition means recognizes that the display unit takes the closed attitude, the shooting attitude, or the editing attitude, respectively. Therefore, the electronic camera recording/playback apparatus obviates the need ~~necessity~~ for the operator to perform mode switching.

According to a third aspect of the present invention, in accordance with the electronic camera recording/playback apparatus of the second aspect, the display unit is provided with a plurality of operation buttons which are arranged on the periphery of the display screen. The ~~;~~ ~~and the~~ respective operation buttons are used correspondingly to the operations for shooting in the shooting attitude and the operations for editing

in the editing attitude, in the shooting attitude and in the editing attitude, respectively. Therefore, the editing functions can be increased without increasing the number of operation buttons. Further, there is no need to provide a touch panel.

5 According to a fourth aspect of the present invention, in accordance with the electronic camera recording/playback apparatus of the third aspect, the mode switching means displays, on the display screen, the function descriptions of the respective operation buttons in each of the shooting attitude and
10 the editing attitude, ~~on the display screen~~, in positions corresponding to the respective operation buttons. Therefore, in both of the shooting attitude and the editing attitude, the operator can easily read the function descriptions.

 According to a fifth aspect of the present invention, the
15 electronic camera recording/playback apparatus of the fourth embodiment further includes: mounting means on which an external memory unit for holding system data of other ~~another~~ equipment is mounted; mounting recognition means for recognizing that the external memory unit is mounted on the mounting means; and system
20 data storage means for holding the system data that is stored in the external memory unit. Therefore, it is possible to use the electronic camera recording/playback apparatus as other ~~another~~ equipment by mounting an external memory unit which holds ~~holding~~ system data of the other equipment on the mounting means.

25 BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a forward perspective view illustrating the closed attitude of an electronic camera recording/playback apparatus according to a first embodiment of the present invention.

5 Figure 2 is a forward perspective view illustrating the shooting attitude of the electronic camera recording/playback apparatus according to the first embodiment.

Figure 3 is a rear ~~backward~~ perspective view illustrating the shooting attitude of the electronic camera recording/playback apparatus according to the first embodiment.

Figure 4 is a side elevation view illustrating the editing attitude of the electronic camera recording/playback apparatus according to the first embodiment.

Figure 5 is an enlarged view of a display unit which is included in the electronic ~~electron~~ camera recording/playback apparatus shown in figure 3.

Figure 6 is an enlarged view of a display unit which is included in the electronic ~~electron~~ camera recording/playback apparatus shown in figure 4.

20 Figure 7 is a block diagram illustrating the construction of the electronic ~~electron~~ camera recording/playback apparatus according to the first embodiment.

Figure 8 is a block diagram illustrating the construction of an electronic ~~electron~~ camera recording/playback apparatus according to a second embodiment of the present invention.

Figure 9 is a forward perspective view illustrating the construction of a conventional electronic camera recording/playback apparatus.

Figure 10 is a rear ~~backward~~ perspective view illustrating the construction of the conventional electronic camera recording/playback apparatus.

DETAILED DESCRIPTION OF THE INVENTION PREFERRED EMBODIMENTS

First {Embodiment 1}

Hereinafter, an electronic camera recording/playback apparatus according to a first embodiment of the present invention will be described with reference to the drawings.

Initially, the construction of an electronic camera recording/playback apparatus 150 will be described with reference to figures 1 to 7. Figure 1 is a forward perspective view illustrating the closed attitude of the electronic camera recording/playback apparatus 150, figure 2 is a forward perspective view illustrating the shooting attitude of the apparatus 150, figure 3 is a rear ~~backward~~ perspective view of the apparatus 150, and figure 4 is a side elevation view illustrating the editing attitude of the apparatus 150. Further, figure 5 is an enlarged view of a display unit of the apparatus 150 in the shooting attitude, figure 6 is an enlarged view of the display unit in the at-editing attitude, and figure 7 is a block diagram illustrating the structure of the electronic camera recording/playback apparatus 150.

The electronic camera recording/playback apparatus 150 comprises a main unit 100, a lens 101, and a display unit 104. The display unit 104 is provided with a liquid crystal display 102 as a display screen and operation buttons 11-17. The liquid crystal display 102 serves as a finder to reflect a subject when shooting the subject, and the liquid crystal display 102 ~~it~~ serves as a screen to be used for playing back ~~playback~~ and editing of shot data when editing the shot data.

The operation buttons 11-17 are placed on the periphery of the liquid crystal display 102, and are used correspondingly to the operations which are required for shooting, and the operations which are required for editing. Further, function descriptions 105 of the operation buttons 11-17 are displayed on the liquid crystal display 102.

Further, the display unit 104 takes the following attitudes: the closed attitude in which the liquid crystal display 102 of the display unit 104 confronts the side surface of the main unit 100, and the rear surface of the display unit 104 is exposed (refer to figure 1); the shooting attitude in which the display unit 104 ~~04~~ is released from the side surface of the main unit 100 (refer to figures 2 and 3); and the editing attitude in which the liquid crystal display 102 is ~~in~~ parallel to with the side surface of the main unit 100 and is exposed to the outside (refer to figure 4).

As shown in Figure 7, the ~~The~~ electronic camera

recording/playback apparatus 150 further includes: an attitude recognition unit 106 (attitude recognition means) for recognizing that the display unit 104 is in any one of the above-mentioned closed attitude, shooting attitude, and editing attitude; a mode switching unit 107 (mode switching means) for setting the main unit 100 in the power-off state, ready-for-shooting state, or ready-for-editing state when the attribute recognition unit 106 recognizes that the display unit 104 is in the closed attitude, shooting attitude, or editing attitude, respectively; and a control unit 108 for controlling the respective components of the electronic camera recording/playback apparatus 150 into the respective states upon the~~en~~ receipt of a signal outputted from the mode switching unit 107.

The attitude recognition unit 106 is, for example, a sensor, and recognizes a signal indicating each attribute of the display unit 104. The mode switching unit 107 sends a state signal to the control unit 108 so as to set the electronic camera recording/playback apparatus 150 in any one of the above-mentioned states, according to an attribute recognition signal outputted from the attribute recognition unit 106. The control unit 108 controls the respective components such as the display unit 104 so as to set the electronic camera recording/playback apparatus 150 in the state that is indicated by the state signal.

Next, the operation of the electronic camera recording/playback apparatus 150 according to the first

embodiment will be described with reference to the
| drawings~~figures~~. Figure 1 shows the closed attitude, wherein the
electronic camera recording/playback apparatus 150 is in the
power-off state.

5 In the closed attitude shown in figure 1, when the display
unit 104 is raised from the main unit 100, the display unit 104
takes the shooting attitude shown in figures 2 and 3. At this
time, the electronic camera recording/playback apparatus 150 is
in the ready-for-shooting state. In the ready-for-shooting state,
10 power is applied to the electronic camera recording/playback
| apparatus 150, and the operation buttons 11-~17 are in their
operable states corresponding to the respective operations which
are required for shooting in the shooting attitude.

 Figure 5 is an enlarged view of the display unit 104 in the
15 shooting attitude. With reference to figure 5, the functions of
| the operation buttons 11-~17 are "PHOTO SNAP", "ZOOM OUT", "ZOOM
IN", "FUNCTION", "E.I.S", "FADE", and "BACK LIGHT", respectively,
and the function descriptions corresponding to the respective
| operation buttons 11-17 are displayed on the liquid crystal
20 display 102. When the operator points the lens 101 at a subject,
the subject is reflected on the liquid crystal display 102.

 While watching the subject on the liquid crystal display 102, the
| operator performs the processes (operations) such as adjusting
adjustment of the brightness of the liquid crystal display or the
25 image quality by using the "FUNCTION" operation, zooming of the

image by using the "ZOOM OUT" or "ZOOM IN" operation, correcting
a correction of the blurred image by using the "E.I.S" operation,
fading by using the "FADE" operation, and correcting the
correction of back light by using the "BACK LIGHT" operation, and
5 thereafter, pressing presses "PHOTO SNAP" so as to take a still
picture of the subject.

Next, from the shooting attitude shown in figures 2 and 3,
the display unit 104 is turned 180 degrees around the joint of
the display unit 104 and the main unit 100 so as to make the
10 liquid crystal display 102 face forward, and is then pushed down
toward the main unit 100, whereby the display unit 104 takes the
editing attitude shown in figure 4, and the electronic camera
recording/playback apparatus 150 goes into the ready-for-editing
state. At this time, the functions of the operation buttons 11-
15 17 are changed from those corresponding to the respective
operations for shooting in the shooting attitude to those
corresponding to the respective operations for editing in the
editing attitude.

Figure 6 is an enlarged view of the display unit 104 in the
20 editing attitude. In the editing attitude, the functions of the
operation buttons 11-17 are "FUNCTION", "UP", "DOWN", "STOP",
"F.F.", "PLAY", and "REW", respectively, and the function
descriptions of the respective buttons are displayed on the
liquid crystal display 102. The operator performs editing and
25 outputs a desired image by using the functions (operations)

corresponding to the respective operation buttons, such as
playing back ~~playback of~~ the image of the shot data by using the
"PLAY" operation, fast forwarding ~~forward of~~ the image by using
the "F.F." operation, rewinding the image ~~fast rewind~~ by using
5 the "REW" operation, and stopping the image ~~stop~~ by using the
"STOP" operation, while displaying the image on the liquid
crystal display 102. Alternatively, the operator displays, by
using the "FUNCTION" operation, an editing menu of special
effects such as mosaic, mirror, wipe, mix, sepia, monotone, trail,
10 art, high sensitivity, etc. on the liquid crystal display 102,
and selects a desired special effect item from the editing menu
by using the "UP" and "DOWN" operation buttons 12-13, and edits
and outputs a reproduced image having the selected special effect.

Next, the operation of the display unit 104 will be
15 described.

As shown in figures 3 and 5, when the display unit 104
takes the shooting attitude, the orientation of the display unit
104 is as follows. That is, with reference to the vertical
direction of the main unit 100, the operation button 14
20 ("FUNCTION") is arranged in the upper left position of the
display unit 104 as shown in figures 3 and 5, the operation
buttons 15, 16, 17 ("E.I.S", "FADE", "BACK LIGHT") are arranged
from the left in the center-to-right position of the upper part
of the display unit 104, and the operation buttons 11, 12, 13
25 ("PHOTO SNAP", "ZOOM OUT", "ZOOM IN") are arranged from the

bottom in the center-to-bottom position of the left hand side
~~left-side~~ part of the display unit 104. In the display unit 104
so oriented, the subject is displayed with its head pointing
upward, on the liquid crystal display 102. Further, the function
5 descriptions 105 such as "FUNCTION" are displayed in the same
vertical direction as that of the subject so that the operator
can correctly read the characters of the function descriptions
105.

Next, when the attitude of the display unit 104 is changed
10 from the shooting attitude shown in figures 3 and 5 to the
editing attitude shown in figures 4 and 6 by the above-mentioned
operation, the orientation of the display unit 104 becomes as
follows. That is, with reference to the vertical direction of
the main unit 100, the operation button 14 ("STOP") is arranged
15 in the lower right position of the display unit 104 shown in
figures 4 and 6, the operation buttons 15, 16, 17 ("F.F.", "PLAY",
"REW") are arranged from the right in the center-to-left portion
of the lower part of the display unit 104, and the operation
buttons 11, 12, 13 ("FUNCTION", "UP", "DOWN") are arranged from
20 the top in the center-to-top position of the right hand side
~~right-side~~ part of the display unit 104. In the display unit 104
so oriented, the subject is displayed with its head pointing
upward, on the liquid crystal display 102. Further, the function
descriptions 105 such as "FUNCTION" are displayed in the same
25 vertical direction as that of the subject so that the operator

can correctly read the characters of the function descriptions
105.

As described above, in the electronic camera
recording/playback apparatus according to the first embodiment,
5 the display unit can take the closed attitude, the shooting
attitude, and the editing attitude, and is provided with the mode
switching means for setting the electronic camera
recording/playback apparatus in the power-off state, the ready-
for-shooting state, or the ready-for-editing state when the
10 display unit takes the closed attitude, the shooting attitude, or
the editing attitude, respectively. Further, the operation
buttons are used correspondingly to the respective operations
which are required for shooting in the shooting attitude and the
respective operations which are required for editing in the
15 editing attitude, and the function descriptions of the operation
buttons in each of the shooting attitude and the editing attitude
are displayed on the display screen in positions corresponding to
the respective operation buttons. Therefore, the electronic
camera recording/playback apparatus of the first embodiment is
20 easy to handle in the closed state, and the electronic
recording/playback apparatus ~~it~~ enables the operator to perform
shooting and editing easily. Further, the apparatus obviates the
necessity for the operator to perform mode switching. Still
further ~~Further~~, the editing functions can be increased without
25 increasing the number of operation buttons. Furthermore, there

is no need to provide the apparatus with a touch panel. Moreover, in both of the shooting attitude and the editing attitude, the operator can easily read the function descriptions.

Second {Embodiment 2}

Hereinafter, an electronic camera recording/playback apparatus according to a second embodiment of the present invention will be described with reference to figure 8. In figure 8, the same reference numerals as those shown in figure 7 designate the same or corresponding parts.

Initially, a description will be given of the structure of the electronic camera recording/playback apparatus according to the second embodiment.

In figure 8, reference numeral 200 denotes an electronic camera recording/playback apparatus, 204 denotes a memory card (external memory unit) for holding system data of an electronic notepad, 201 denotes a mounting pad (mounting means) on which the memory card 204 is mounted, 202 denotes a mounting recognition unit (mounting recognition means) for recognizing that the memory card 204 is mounted on the mounting pad 201, and 203 denotes a system memory (system data storage means) for holding the system data that is stored in the memory card 204.

Next, the operation of the electronic camera recording/playback apparatus 200 according to this second embodiment will be described with reference to figure 8. When the operator does not mount anything ~~mounts nothing~~ on the

mounting pad 201, the mounting recognition unit 202 recognizes that nothing is mounted on the mounting pad 201, and the control unit 108 controls the respective components such as the display unit 104 so that the electronic camera recording/playback

5 apparatus 200 operates as an electronic camera recording/playback apparatus. Thereby, the electronic camera recording/playback apparatus 200 can be used, as a matter of course, as an electronic camera recording/playback apparatus.

10 On the other hand, when ~~When~~ the operator mounts the memory card 204 which holds ~~holding~~ the system data of the electronic notepad on the mounting pad 201, the mounting recognition unit 202 recognizes that the memory card 204 is mounted on the mounting pad 201, and the system memory 203 stores the system data that is stored in the memory card 204. The control unit 108
15 controls the respective components such as the display unit 104 so that the electronic camera recording/playback apparatus 200 operates as an electronic notepad based ~~, on the basis of~~ the system data that is stored in the system memory 203. Thereby, the electronic camera recording/playback apparatus 200 can be
20 used as an electronic notepad.

While in this second embodiment the electronic camera recording/playback apparatus 200 uses a memory card as an external memory unit, a ~~an~~ MD may be used instead of the memory card, or system data may be distributed from an external unit
25 such as a personal computer. Further, while in this second

embodiment the electronic camera recording/playback apparatus 200 is used as an electronic notepad, the apparatus 200 may be used as a game machine by using an external memory unit which holds ~~holding~~ system data of a game machine so long as it can be used
5 in the attitude of the electronic camera recording/playback apparatus.

As described above, the electronic camera recording/playback apparatus according to the second embodiment is provided with the mounting means on which an external memory
10 unit for holding system data of other ~~another~~ equipment is mounted, the mounting recognition means for recognizing that the external memory unit is mounted on the mounting means, and the system data storage means for holding the system data that is stored in the external memory unit. Therefore, it is possible to
15 use the electronic camera recording/playback apparatus of the second embodiment as other ~~another~~ equipment by mounting an external memory unit for holding system data of the other equipment on the mounting means.

ABSTRACT OF THE DISCLOSURE

An electronic camera recording/playback apparatus operable
to both shoot ~~has the function of shooting~~ a subject and edit the
5 ~~function of editing~~ shot data. The apparatus, and comprises a
main unit and a display unit for displaying a shot image or an
edited image, and the display unit is able to take plural
attitudes to the main unit which areas follows: a closed attitude
in which a display screen of the display unit confronts the side
10 surface of the main unit, and the rear surface of the display
unit is exposed; a shooting attitude in which the display unit is
released from the side surface of the main unit; and an editing
attitude in which the display screen of the display unit is ~~in~~
parallel to ~~with~~ the side surface of the main unit and is exposed.
15 Therefore, it is possible to provide an electronic camera
recording/playback apparatus which ~~that~~ is simple to operate, and
which enables shooting and editing of shot data.